REMARKS

Prior to examination of the above-identified application, please enter this preliminary amendment. No new matter has been added. Applicant respectfully requests an action on the merits.

Respectfully submitted,

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APPENDIX

IN THE SPECIFICATION

Please amend the heading beginning with "TITLE OF THE INVENTION" on page 1, line 1, as follows:

TITLE [OF THE INVENTION]

Please amend the heading beginning with "BACKGROUND OF THE " on page 1, line 6, as follows:

BACKGROUND [OF THE INVENTION]

Please amend the paragraph beginning with "This invention relates" on page 1, line 8, as follows:

An embodiment of [T]this invention relates to the field of data transfer between a server and a client and, more specifically, to a system, method, and apparatus for using an intermediate driver to allow an InfiniBand ™ server to transfer data with an Ethernet client, where the intermediate driver provides a "fail over" function to improve system performance.

Please amend the heading beginning with "Field of " on page 1, line 7, as follows:

1. Technical Field [of the Invention]

Please amend the heading beginning with "Background of " on page 1, line 13, as follows:

2. Description of the Related Arts [Background of the Invention]

Please amend the paragraph beginning with "An embodiment of the" on page 4, line 5, as follows:

An embodiment of the invention allows data to be transferred from a server utilizing a high speed Input/Output (I/O) architecture, such as Infiniband, to a client operating a different I/O architecture, such as Ethernet. Infiniband devices and Ethernet devices transmit data via packets having different, non-compatible formats. Therefore, an Ethernet device cannot directly transmit a packet to an Infiniband device, and vice-versa. An embodiment of [T]the present invention is directed to a system, method, and apparatus to use an intermediate driver to transmit data from a server utilizing Infiniband to a client using Ethernet in an undisrupted manner. The intermediate driver may provide a "fail over" function that ensures data correctly transfers between a client and a server.

Please amend the paragraph beginning with "FIG. 1 illustrates" on page 4, line 14, as follows:

"FIG. 1 illustrates a block diagram showing devices utilized to transfer data from Virtual Local Area Networks (VLAN) 110, IEEE 802.1Q published 1998, at a server 100 transmitting data via Infiniband to a client

105 receiving data via Ethernet according to an embodiment of the invention. The system allows the server 100 to be represented by multiple VLANs, for example ***M*** VLANS 110. In other embodiments, the ***M*** VLANs 110 may not be necessary – the server 100 may instead be located in a single computer, for example. The server 100 may be a server for a backbone network, such as a data center. A local or remote user may desire to access data located within a memory located in the ***M*** VLANs 110. The server 100 or database may be supported by ***M*** VLANs 110 to allow the server or database to operate as quickly and efficiently as possible.

Please amend the paragraph beginning with "Because Inifiband and Ethernet" on page 5, line 1, as follows:

"Because Infiniband and Ethernet utilize different protocols and packet formats, an Infiniband packet must be converted into an Ethernet format before it can be received by a Ethernet client 105. As illustrated in FIG. 1, the ***M*** VLANs 110 are coupled to an intermediate driver 115. The intermediate driver 115 may be a Microsoft Network Driver Interface Specification (NDIS), published 1998, driver, used to create ***M*** virtual miniport instances on top of ***N*** virtual adapters. NDIS is a network driver interface specification from Microsoft. A network driver interface is a software interface between the transport protocol and the data link protocol (i.e., network driver). The interface provides a protocol manager

that accepts requests from the transport layer and activates the network adapter. Network adapters with compliant network drivers can be freely interchanged. This method allows multiple protocol stacks to run over one network adapter.

Please amend the paragraph beginning with "FIG. 6 illustrates" on page 11, line 11, as follows:

FIG. 6 illustrates a process to determine whether a target Ethernet link has failed and, if so, to invoke the "fail over" function according to an embodiment of the invention. First, the system determines 600 whether all target Ethernet links (i.e., links between the Ethernet switch 145 and each of the bridges used in the Infiniband-Ethernet bridges 140) are alive. If all are alive, processing remains at [step] operation 600. Otherwise, processing proceeds to [step] operation 605. At [step] operation 605, the system determines which bridge of the Infiniband-Ethernet bridges 140 has failed. Next, the intermediate driver 115 causes the system to stop 610 using the VNIC corresponding to the failed Infiniband-Ethernet bridge. A back-up VNIC is then utilized 615 to transfer data with a corresponding back-up bridge. Processing then returns to [step] operation 600.

Please amend the paragraph beginning with "As discussed above" on page 11, line 20, as follows:

As discussed above, an embodiment of the invention allows data to

be transferred from a server 100 utilizing a high speed I/O architecture, such as Infiniband, to a client 105 operating a different I/O architecture, such as Ethernet. Because Infiniband devices and Ethernet devices transmit data via packets having different, non-compatible formats, an Ethernet device cannot directly transmit a packet to an Infiniband device, and vice-versa. An embodiment of [T]the present invention uses an intermediate driver 115 to transmit data from an Infiniband server 100 to an Ethernet client 105 in an undisrupted manner. The intermediate driver 115 communicates with ***N*** VNICs 120, each of which represent a particular Infiniband-Ethernet bridge. When data flow through one of the bridges 140 is disrupted, or stops completely, the intermediate driver 115 may be notified of the error through the use of the ***N*** VNICs 120. In the event of such an error, the intermediate driver 115 may use the ***N*** VNICs 120 to stop the data flow through the faulty bridge, and instead transmit data through a different bridge. Accordingly, the intermediate driver 115 supports a "fail-over" function.

Please amend the paragraph beginning with "While the description above" on page 12, line 10, as follows:

While the description above refers to particular embodiments of the present invention, it will be understood that many modifications may be made without departing from the spirit thereof. The accompanying claims are intended to cover such modifications as would fall within the true

scope and spirit of an embodiment of the present invention. The presently disclosed embodiments are therefore to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims, rather than the foregoing description, and all changes which come within the meaning and range of equivalency of the claims are therefore intended to be embraced therein.

IN THE CLAIMS:

Please add claims 25-31 as follows:

25. (New) A system, comprising:

at least one server network to communicate data via a first Input/Output (I/O) architecture;

at least two Virtual Network Interface Cards (VNICs) to communicate the data via the first I/O architecture;

at least two bridging devices to convert packets useable in the first I/O architecture to packets useable in a second I/O architecture utilized by a client network, wherein no more than one of the at least two bridging devices transfers the data with any one of the at least two VNICs, and the at least two bridging devices transfer the data with the client network; and

at least one intermediate driver to bind to the at least one server network and to the at least two VNICs, wherein the at least one intermediate driver provides a fail-over function to maintain a connection between the server network and the client network.

26. (New) The system of claim 25, wherein the first I/O architecture is an Infiniband architecture.

27. (New) The system of claim 25, wherein the second I/O architecture is an Ethernet architecture.

28. (New) The system of claim 25, wherein the at least one intermediate driver provides at least one of: Internet Protocol Security (IPSec), and Virtual Local Area Network (VLAN) protocol.

29. (New) The system of claim 25, wherein the at least one intermediate driver binds to the at least one server network via at least one miniport instance.

30. (New) The system of claim 25, wherein when an error occurs during data transfer between the one of the at least two bridging devices and the switching device, an error message is sent to one of the at least two VNICs corresponding to the one of the at least two bridging devices having the error.

31. (New) The system of claim 30, wherein the fail-over function terminates a connection between the one of the at least two bridging devices having the error and the one of the at least two VNICs corresponding to the one of the at least two bridging devices having the error, and initiates a connection between an alternative one of the at least two bridging devices and an alternative one of the at least two VNICs.